Creation Matters

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CRS Update

As many of you may know, there is no CRS conference in 2023 because the International Conference on Creationism (ICC) is taking place this year. The CRS conference primarily presents research in-progress as preparation for later publication, including presentation at the ICC. This summer at the ICC, there will be many completed research projects presented from a wide variety of creation science fields. CRS members are encouraged to attend. The CRS will have a vendor booth at the ICC and a reception one evening during the conference, with the exact date still to be determined. Stay tuned for that.

The next CRS conference will be held on July 25-27, 2024 at the Ark Encounter in Williamstown, Kentucky. The CRS has a block of rooms reserved at the new Hampton Inn immediately adjacent to the Ark for conference attendees, and there are many other accommodations available in the area as well. Reservations will be open for those reserved rooms as early as this August. The CRS conference will be followed by an optional Sunday afternoon fieldtrip led by Danny Faulkner to explore the beautiful arches of the Red River Gorge.

The new editor of Creation Matters is Lindsay Harold. Lindsay has been interested in creation science since the age of 14 when her family attended an Answers in Genesis conference. There, she was excited to learn that there are scientific answers to the many questions she had about evolution and the age of the Earth. Her interest in creation fueled a life-long love of science, and after finishing her master's degree in biology, she went on to teach several courses in that field at the community college level. However, she learned the hard way that asking questions about origins is not always welcomed in academic circles when she

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Modern Genetics vs. Outdated Darwinism

by Robert Carter, PhD

Biology is a *lot* more complicated than anyone thought, but Darwinism was developed at a time when we knew so little about living things that scientists were free to speculate wildly. In one sense, Darwinism depends on life being *simple*. Yet, as we learn more and more about life, we see the opposite is true. What follows is a discussion of two different but related topics that have grave implications for evolutionary speculations: the fall of the Weismann Barrier and the ubiquity of RNA in the cell. This will be just a sketch, however. For more information, see my new book *Biblical Biology 101* and the second edition of *Evolution's Achilles' Heels*, both of which will be available on creation.com by the end of the year.

The 'barrier' has been breached

A cardinal rule in biology is that the body cells and reproductive cells are separate in higher organisms. This is called the Weismann barrier, after famous German evolutionist August Weismann (1834–1914) who discovered it. It was he who first realized the difference between the reproductive cells and the body cells in higher organisms.

In higher organisms, there is a difference between the somatic (body) cell and the germ (reproductive) cells. In essence, the reproductive germ cells make the somatic cells *in order to make another generation of germ cells*. This is a one-way system, or at least should be.

The reproductive cells are truly different. During the early stages of embryogenesis, they even spend time outside the embryo. The lineage of cells that are destined to become the germline will cluster on a structure called the allantois. They hang out there for several days and reproduce several times. Later, they will form a cellular conga line, march toward the rapidly growing baby, get inside, and take up residence in the gonads.[1] Prior to

[1] Wilhelm, D., Palmer, S., and Koopman, P., Sex determination and gonadal development in mammals, *Physiol. Rev.* **87**(1):1–28, 2007.

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Math Matters

The Hubble Constant

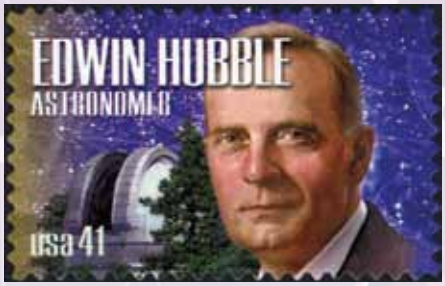
by Don DeYoung, PhD

During the 1920s, astronomer Edwin Hubble (1889-1953) and colleagues made a profound discovery. California's 100-inch Hooker telescope on Mount Wilson, then largest in the world, revealed vast star systems at great distances. It was realized that the universe was filled with distant galaxies and much larger than previously known.

Light from the remote galaxies also indicated an outward motion with recessional velocity proportional to distance. That is, the greater the distance, the greater the outward expansion of the deep space galaxies.

The Hubble-Lemaitre Law, as it is known, describes the rate at which the universe is expanding. A galaxy's distance d and velocity v are related by the Hubble constant H, v = Hd. Galaxy velocity is readily measured by the Doppler redshift of its starlight. In contrast, distances are less well known and various measurement techniques do not always agree. As a result the constant H is not precisely known.

Current values of H are in the range 69.8 - 74 km/s/Mpc. The units are a bit awkward with the galaxy speed in km/sec, divided by distance in megaparsecs (Mpc). One parsec is a distance of 3.26 light years, and a light year itself is about 6 trillion miles (10 trillion kilometers). As a Hubble Law example, consider the barred spiral galaxy NGC 2903, located far beyond the constellation Leo. It is about 9.33 Mpc away (30 million light years) and moves radially outward at 556 km/sec. These values give a Hubble constant of 59.6 km/sec/Mpc, less than the typical range for H.



2008 postage stamp honoring Edwin Hubble with the Palomar Telescope in the background. (Image from the Smithsonian National Postal Museum)

The big bang model assumes that all space matter began at a single singularity point. In this model, galaxies have moved to their current distances d in a time T = d/v = 1/H, just the inverse of the Hubble constant. This time T is thus taken as the age of the universe, the time when expansion began. For galaxy NGC 2903, with the proper conversion of units, H^{-1} = 16.4 billion years. Creationists reject this age estimate entirely since it assumes the standard big bang origin of the universe. In sharp contrast, the cosmos was supernaturally created with its majestic components spread across distant space.

The value of the Hubble constant is much debated in current astronomy and appears to be a variable rather than a single value. The physical universe does appear to be expanding and perhaps even accelerating outward. Such findings provide clues to Day Four of the Creation Week when the heavens were spoken into existence. For example, a static universe with no expansion would be unstable with an eventual inward collapse of galaxies due to the attractive pull of gravity. A stable universe requires dynamical activity, including orbital motions as well as the universal expansion as observed. CM

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Update

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lost her spot in a PhD biology program over her views. Lindsay and her husband Doug met at the first CRS conference in 2009. They have been married nearly 13 years and have 5 children. Lindsay is currently a homeschool mom as well as a writer. Her book *The Bible and Science on Gender, Sex, and Marriage*, written with her co-author Dan Biddle, was published by Genesis Apologetics in 2022. She also blogs occasionally on a variety of Biblical worldview topics at lindsayharold.com.

Research continues in the CRS, with this year's deadline for research grants just reached on April 30. The society is already taking applications for next year's funding. Grants are available for a wide variety of creation-related research projects across many fields of science. Application forms and instructions for submission are available on our website at creationresearch.org. We also need donors to help with research funding. Your generosity makes a big difference.

The iDINO project is moving forward with experiments on collagen decay using alligator bones. We are being aided in obtaining suitable bone specimens by an organization called EEARSS (Environmental Education Awareness Research Support and Services). Their website can be reached at EEARSS.org.

The CRS continues to need a lab director/COO for the Van Andel Research Center. Please pray that a suitable candidate will be found soon.

The annual board meeting for the CRS is being held June 1-3, 2023 at the CRS headquarters in Glendale, AZ. Prayers are appreciated for wisdom on upcoming decisions and for safe travel for all the board members.

Doug and Lindsay Harold with their five daughters

Genetics

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this, there is no morphological difference between male and female (there is always a genetic difference), but afterward the child will begin to develop secondary sex characteristics as the ovaries or testes start producing different levels of several hormones.

As an aside, yet an important one, please note that all babies do not "start out female". This is an urban myth based on a gross misunderstanding of embryogenesis. First, there is always a genetic difference between males and females. Second, the sex of the baby is indeterminate prior to a certain stage in development. Even after the arms and legs form, the outward sexual structures have not yet formed. Eventually, a section between the legs will fold over and either 'poke out' or 'poke in'. Third, there is a lot more going on the embryo than just hormone production in the gonads. For example, the hypothalamus plays a significant role. In the end, putting aside rare developmental anomalies, males and females are different, from day 1. This is a fact of biology that cannot be ignored.

One cannot underestimate how important Weismann's concept was for the development of early evolutionary theory. In fact, Weismann was one of the first to strongly reject the Lamarckian view of inheritance. In doing so, he was going against Darwin himself.[2]

Together with the 'central dogma of molecular biology', the idea that information only flows in one direction (from DNA to RNA to protein), we have the two most important aspects of the gene-centric view of life. Richard Dawkins would never have written his famous book *The Selfish Gene*[3] were it not for these ideas.

What if I told you that the Weismann barrier and the central dogma are both wrong? Yes, the 'barrier' has been breached. These are the two most fundamental ideas underlying Darwinian evolution, but they have both been

[2] Carter, R., Darwin's Lamarckism vindicated? 1 March 2011; creation.com/epigenetics-and-darwin.

[3] Doyle, S., 'Selfish gene' theory, the ENCODE project and 'vestigial' muscles, creation.com/selfish-gene-theory-the-encode-project-and-vestigial-muscles, 22 Sep 2007.

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disproven.[4]

For example, we now know that RNA is actively absorbed by developing sperm cells in the epididymis. Thus, there is a *deliberately designed* system to get somatic RNA into sperm cells. These will, in turn, be used by the early zygote as templates for protein translation, to control translation via RNA interference, and to store epigenetic tags that will turn different genes on or off. In other words, the environment of the father can influence which genes are active in the child. This invalidates the 'gene centric' view of life.

We have also recently discovered that a DNA polymerase called Polθ ("pol theta") will use an RNA template to fix broken regions of DNA. Thus, copies of that gene (in the form of mRNA), RNA copies of similar genes, or RNA copies of genes that just have a similar stretch of DNA can be copied into the genome. This could easily transpose 'information' from one place in the genome to another. Worse, if any mutations have happened to that RNA template, they will be copied into the genome as well. This is non-Mendelian inheritance and occurs across the genome. Of course, this is only a problem for the Weismann barrier if it occurs in the germ cells. But, as we saw above, we *know* that sperm actively absorb RNA from somatic tissue. If this RNA is ever used as a template by Polθ, all bets are off. I assume researchers are now trying to see if oocytes or even mature eggs also absorb RNA.

The versatility and functionality of RNA

What has become clear over the past several years is that the cell invests in a massive production of RNA. Most of this is coded in the so-called junk DNA. In high school biology, we all learn about messenger RNA (mRNA), transfer RNA (tRNA), and ribosomal RNA (rRNA). In recent years, however, a veritable cornucopia of RNAs has been discovered. These range from micro RNAs (miRNA), which average 22 nucleotides, to long non-coding coding RNAs (lncRNA), which can reach tens of thousands of nucleotides. Yet, the lncRNA taxon was created as a wastebasket into which the early discoverers threw every non-coding RNA they found. Their presence did not fit the prevailing view that the main function of the genome was to make protein. It also took a long time to work out functions for these things. This was partly due to a lack of funding, partly due to a lack of interest, and partly due to the fact that they required a whole new way of thinking about the genome. The cell was simply not supposed to be produc-

See **Genetics** *on page 7*

[4] Carter, R., The barrier has been breached! Making a fool out of Professor Wise-man, creation.com/breaching-the-weismann-barrier, 9 Sep 2021.

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Journeys to the Edge of Creation

2-DVD boxed set:

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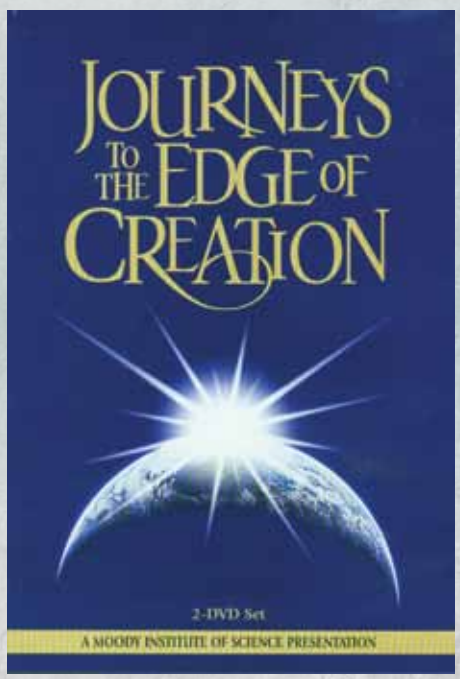

These films are classics you don't want to miss. With breathtaking images from the Hubble telescope and a panel of experts, including CRS board member Danny Faulkner, they will inspire and educate you. They are a great introduction to the majesty and mind-boggling scale of the universe for the whole family. Don't miss the wonder of God's creation.

When I consider thy heavens, the work of thy fingers, the moon and the stars, which thou hast ordained; What is man, that thou art mindful of him? and the son of man, that thou visitest him?

Psalm 8:3-4

Moody Institute of Science. 1996.

Each about 40 min.

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Summaries of Cutting-Edge Research from the *Creation Research Society Quarterly*

Summaries compiled by Jean K. Lightner, DVM, MS

It is crucial for creation research to investigate the world around us while engaging the current scientific literature and Scripture as we build the creation model in various scientific fields. CRS exists to support and publish such research. Only through high-quality research can we equip Christians with strong, sound apologetic arguments that demonstrate the robustness of the creation model in understanding the world around us.

Exploring Relationships Among Primates

An important aspect of creation biology is understanding how plants and animals are (or are not) related. Previously in the *Creation Research Society Quarterly* (*CRSQ*), the gene content method (GCM) has been used to help answer these questions. This compares the proteins produced by different species and groups these species by similarity. Using this method, Lightner and Cserhati (2019) demonstrated that humans are profoundly different from other primates, as well as other mammals and birds, based on the proteins we produce.

In the Fall 2022 issue of the *CRSQ*, Cserhati (2022) focuses the study on primates, adding more species and a mtDNA comparison to accompany the GCM. The results again highlight the uniqueness of humans. They also suggest there may be more groups of primates than the number detected in the previous study.

These comparisons are valuable as we continue to develop and refine statistical techniques to identify created kinds. It highlights the importance of using multiple lines of evidence, such as data on hybridization between species. It also suggests that mtDNA comparisons may reveal lineages within created kinds, rather than necessarily identifying the created kind.

Lightner, J.K. and M. Cserhati. 2019. The uniqueness of humans is clearly demonstrated by the gene content statistical baraminology method. *CRSQ* 55(3):132-141.

Cserhati, M. 2022. Molecular baraminology of primates. *CRSQ* 59:72-80.

The Heat Problem of Accelerated Decay

Based on radiometric dating, secular scientists claim many rocks are much older than biblical history would allow. Accelerated decay of radioisotopes has been proposed by creation researchers to account for the patterns observed. While many lines of evidence support the idea of accelerated decay, there are still unanswered questions. One is *where did all the heat generated by this rapid decay go?* (Snelling, 2005)

In a two-part series, Dr. Barbara Helmkamp (2022a, 2022b) has considered if latent heat could solve this heat problem. In short, a phase change for the condensed matter comprising large nuclei is proposed as a heat sink during an episode of accelerated nuclear decay. The nucleus of the final, stable isotope in the uranium decay series, 206Pb, and the thorium decay series, 208Pb, would absorb energy and cool their immediate environments. These two decay series are geologically relevant to the formation of radiohalos. Radiohalos are found in granitic rocks and the alpha decay resulted in concentric spherical shells surrounding their respective lead nuclei. Further research is anticipated to continue to explore this model, and an invitation for input from other scientists was made.

Helmkamp, B.S. 2022a. Latent heat could solve accelerated nuclear decay's heat problem – Part 1. *CRSQ* 59:29-38.

Helmkamp, B.S. 2022b. Latent heat could solve accelerated nuclear decay's heat problem – Part 2. *CRSQ* 59:92-102.

Snelling, A.A. 2005. Radiohalos in granites: Evidence for accelerated nuclear decay. In Vardiman, Snelling, and Chaffin (editors). *Radioisotopes and the Age of the Earth Volume II*. Institute for Creation Research, El Cajon, CA, and Creation Research Society, Chino Valley, AZ. Downloaded from https://www.icr.org/article/radioisotopes-age-earth/.

if you call out for insight and cry aloud for understanding,
and if you look for it as for silver and search for it as for hidden treasure,
then you will understand the fear of the LORD and find the knowledge of God.
For the LORD gives wisdom, and from his mouth come knowledge and understanding.

Proverbs 2:3-6 NIV

Continued creation research is made possible by the generous gifts (time, money, and prayer) of our many supporters. Thanks to all who have contributed!

Apologetics Matters

Defending the Christian Worldview with Evidence

If Resurrection is Impossible, so is Abiogenesis

by Lindsay Harold, MAT

Skeptics of Christianity commonly mock the resurrection of Jesus as impossible and ridiculous. It is well-known and established by countless observations that no living thing can come back to life, they say. Christians actually agree with this if we are speaking of natural causes. However, the Christian claim is not that Jesus rose from the dead by natural causes but by the supernatural power of God. It was a miracle designed to demonstrate who He is.

On the flip side, atheists are forced to believe in abiogenesis in which the first life was spontaneously generated through natural processes. If there is no God to create life, then it must have occurred naturally. Even those who suggest aliens seeded life on Earth have only pushed the origin of life back further and to another location. The original life would still have to arise by natural processes if atheism is true. In order to support this naturalistic viewpoint, there have been many attempts to explain how life can arise spontaneously, none of which has proven fruitful. Yet if there is no God, life must be capable of arising through natural processes because we are here.

Thus, abiogenesis is treated as necessary, and even scientific, while resurrection is treated as the crazy ramblings of religious people that can be immediately dismissed. This is highly illogical.

A resurrection from the dead is much more likely than abiogenesis, even if we limit ourselves to purely natural processes. After all, a dead body has all of the necessary parts for life already present. It contains many proteins that have been produced and folded correctly. It already has a genetic code built within DNA. It has phospholipid membranes already in place. It has cellular machinery. By far the biggest problem for abiogenesis is producing all of these things by chance. Just getting any functional protein without guidance would take millions of years of chance chemical reactions. A dead cell already has many proteins in place as well as all, or at least most, of the other chemicals and parts needed for life. It must be easier to take it from this state back to life than to build all this from scratch and then animate it.

Note that this is a very straightforward and obvious logical argument. It will always be easier to do one step than to do that same step plus extra steps. Both abiogenesis and resurrection require turning non-life into life. That part is the same for both. Yet with abiogenesis, the components are not present from the beginning so they must first be built and arranged, which is not at all a simple matter. Thus, it is necessarily true that resurrection is easier and more likely to occur naturally than abiogenesis.

So why don't we observe resurrections all the time in nature? Why don't bacteria, for example, spontaneously return to life after dying? That's many orders of magnitude more likely than abiogenesis, yet we have never observed it. That ought to tell us that abiogenesis is impossible. Generating life from non-life, like rising from the dead, requires supernatural activity. We cannot escape the need for miracles.

But sanctify the Lord God in your hearts: and be ready always to give an answer to every man that asketh you a reason of the hope that is in you with meekness and fear.

1 Peter 3:15 KJV

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CRS is looking for a new Lab Director

The CRS Lab Director oversees the research and operational activities at the beautiful facilities of Van Andel Creation Research Center in Glendale, AZ.

More information and an application are available on the website:

See https://www.creationresearch.org/job-at-crs

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Genetics

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ing myriads of RNAs with bewilderingly diverse functions. Yet there they were.

RNA does so many things in the cell that it is hard to keep track of it all. For example, lncRNAs are involved in the alternate splicing of genes and in placing transcription factors next to genes.[5] They serve as scaffolding for proteins and are involved in chromatin remodeling. In fact, they completely coat chromatin and are most certainly passed to the next generation in that state. A reverse-twisted form of DNA called Z-DNA is often found in introns. This is controlled by a lncRNA called ADAR1, which binds near those repetitive elements that are ubiquitous in the genome but that are often dismissed as superfluous. The repetitive sequences in lncRNAs act as protein binding domains and, when clumped together, they can partition off parts of the internal cellular space as a 'phase separated domain' with a unique internal chemical environment. They modify histones. They are involved in DNA methylation and demethylation. They handle chromatin looping and dictate cell fate. They can activate or silence genes in the absence of DNA methylation. They form triplex structures with DNA by lying down in the major groove of DNA. These are particularly abundant in regulatory regions but not in between.[6]

There are even RNA 'genes'. *Xist* is a 17kb-long lncRNA that contains eight exons and is alternately spliced, just like a protein coding gene. Yet, it is never turned into protein and, if one placed a start codon at the upstream end, it would produce a nonsense protein. This one RNA interacts with at least 80 separate proteins. RNA 'genes' break the paradigm. Junk DNA was a concept from the last millennium. It's time to let it go.

We are also now just coming to grips with the massive amount of RNA editing that goes on in the cell. It has always been more difficult to sequence RNA than DNA. Not only is RNA much more chemically sensitive, but there are a lot more than just four 'letters' in RNA. For example, the nucleotide inosine is commonly found in RNA. This comes from a modification of adenine. There are at least 140 known chemical modifications that happen to RNA. We now understand that there are RNA-based RNA modification writers, readers, and erasers. Scientists are only now tuning their Nanopore sequencing machines to work with RNA. By pulling DNA through a small hole in a charged plate, one can read the letters in sequence by detecting small electrical differences. The same is true for RNA, apparently, but there are a lot more than four letters to work with, so the work is painstaking and laborious. However, great strides are being made.

The general lack of junk DNA is yet another Achilles' heel of evolutionary genetics, for, without it, evolutionary mathematics does not work, and more functions are still being found for the non-protein coding DNA. In fact, the 'junk' looks like it is more active than the 'genes', turning the old idea that we are protein-based organisms on its head. In the words of an evolutionary biologist, J.S. Mattick:

> The failure to recognize the full implications of this—particularly the possibility that the intervening noncoding sequences may be transmitting parallel information in the form of RNA molecules—may well go down as one of the biggest mistakes in the history of molecular biology.[7] CM

[5] This solves a mystery. Transcription factors are proteins that, when stuck to DNA, can activate a nearby downstream gene. But their recognition sites are not highly specific. It turns out that lncRNA, which have a longer and much more specific recognition site, attach to the DNA *first* and guide the protein into place.

[6] Mattick, J. and Amaral, P., *RNA: the epicenter of genetic information*, CRC Press, 2023.

[7] J.S. Mattick, as quoted in Gibbs, W.W., The Unseen genome: gems amid the junk, *Scientific American*,pp. 47–53, Nov 2003.

Available in the CRS bookstore

Creation Basics and Beyond 2nd Edition

A semi-technical guide to scientific evidence for creation. Written by staff scientists at ICR, the topics include design in the cell, the fallacy of junk DNA, the origin of races, age of the universe, and the dating of fossils. This book provides useful information for those seeking a deeper technical understanding of creation science. 348 pages.

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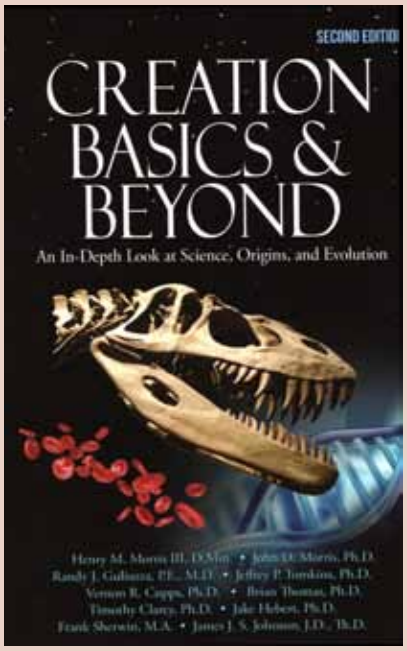

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